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Claim 30 (New). The method of claim 24, wherein, said step d, of receiving and distributing said second force over said contact area includes the step k,, of distributing said second force over said contact area, substantially uniformly.

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### REMARKS

Applicants submits the Declarations of 37 CFR 132 made respectively by Randall A. Addington and W. Robert Addington, II, DO, and incorporates said Declarations by reference, in this Amendment.

1. Applicant has added Figure 9 (new) which shows in a flow chart, the claimed method directed to the placing of a finger pad shield on a bowler's finger inserted into a finger hole extending into the interior of the bowling ball. The flow chart method follows the method disclosed in the specification particularly in Figure 6 and on pages 23 to 26, as placing a finger pad shield in contact with a bowler's finger pad, forming a contact area between the bowler's finger pad and the finger pad shield, placing the bowler's finger and the finger pad shield in the finger hole of a bowling ball, placing the finger pad shield in contact with the interior surface of the finger hole, releasing the bowler's finger pad from the bowling ball hole by applying a force from the bowler's finger pad against surface of the finger pad shield and against the interior surface of the finger hole, and receiving the force of bowling ball against the finger pad shield and distributing the force of the bowling ball over the contact area. While Examiner has required a flow chart of the inventive method, and Applicants has complied with Examiner's requirement, Applicant objects to this requirement of a flow chart as not necessary where the claimed and disclosed inventive method is fully taught by Applicants' disclosure, to one skilled in the art. This flow chart requirement is typically used in connection with computer software applications or industrial methods of a length or number of steps or involving decisions, which need a flow chart for comprehension. This inventive method is not such

an invention does not require a flow chart for comprehensive understanding.

2. Applicant has adequately disclosed in the specification, the step recited in Claim 1 (cancelled), as "applying a force in a first direction from said bowler's finger pad against said first surface to said interior surface of said bowling ball. (Underlining added to reflect Examiner's underlining in Paragraph 2 of Paper No. 2). On page 4 of the Application, the method is disclosed as "applying the maximum natural force a bowler can produce through his or her finger, inserted into the bowling ball ..." "...allowing the bowler to apply his or her maximum natural force through that inserted finger ." On page 5, the method is disclosed as "... [utilizing] the maximum natural force the bowler is capable of producing, by the bowler's inserted finger to lift the ball at the moment of release and impart the proper direction and spin to the ball." On page 5, paragraphs 2 and 3, the disclosure is of use of an inserted finger . On page 8, second paragraph, the disclosure is of "...[preventing] those forces produced between the bowling ball hole and the bowler's finger, from creating pressure hot spots on the ...finger pad..." In Figures 5 and 6 is disclosed the finger pad shield positioned for insertion into, or positioned in, the bowling ball finger hole. On page 23, second paragraph, "The bowler's finger inserted into the hole of the bowling ball , is the last contact with the bowling ball and the final opportunity for the bowler to impart the proper spin, direction and velocity to the bowling ball." On page 25, third paragraph, is disclosed the bowler's aid, shown in Figure 3 with finger pad shield 14, for the middle first and second fingers, "... used to grasp the bowling ball by insertion into the bowling ball holes." See Figure 5 and 6 for the disclosure of the finger pad shield 14 on the middle finger pads of the bowler's first and second middle fingers, positioned for insertion into, or inserted into, bowling ball finger hole.

In summary, the inventive method disclosed is of using a finger pad shield on the bowler's fingers, such as for example, the middle finger or fingers inserted into the bowling ball finger hole and in contact with the finger hole as shown in Figures 5 and 6

and as described in the specification. Claim 1, as submitted recites "inserting the finger pad shield in the finger hole of a bowling ball;" "placing ... the finger pad shield in contact with the interior surface of said finger grip hole," and "...applying a force in a first direction from said bowler's finger pad against said first surface and to the interior surface of said bowling ball." The "interior surface of the bowling ball," as recited in Claim 1, is clearly recited as the interior surface of the bowling ball finger hole. The support in the disclosure of the specification is for the finger pad shield on the finger pad inserted into the interior surface of said bowling ball which is shown clearly, and described, as the interior surface of the bowling ball finger hole.

This rejection made to the recitation in Claim 1 (cancelled), of the "interior surface of said bowling ball," has been made moot by new claim 14, added in substitution of Claim 1.

3. In response to Examiner's objections to claims 1-13 under 35 USC 112, applicant has cancelled Claim 1, 2, and 5, 7, 8, 9, 10, 11, 12 and 13. and inserted in substitution new Claims 14 to 30, and has amended Claim 4. Claims 3 and 4 are now dependent from new Claim 14. The New Claims 14 to 30 are of the same scope and claim the same invention as claimed in original claims 1 to 13. Support for the statement that the New Claims recite the subject matter of cancelled claim 1, is provided below.

New Claims 14 to 30, including claims 3 and 4, are supported by the specification as follows.

Starting with page 4 and 5 of the specification, the invention is described as a method of controlling a bowling ball at the moment of release by distributing the force of the bowling ball over the bowler's finger pad to reduce the pressure at any area over the contact area made between a first surface of a finger pad shield and the bowler's finger pad. The claimed invention is directed to lifting the bowling ball at the moment of

release and imparting the proper direction and spin to the bowling ball. At the same time, namely the moment of release, the claimed method as recited in new Claim 14, and 15, is directed to applying a first force from the finger pad to lift the ball, utilizing the bowler's maximum natural force the bowler is capable of producing. The inventive method, is described as using a finger pad shield and with an area of contact made by the finger pad shield placed in contact with the bowler's finger pad, which is inserted into the finger grip hole of a bowling ball. See pages 4-5 and page 8 of the specification. The finger pad shield is described as shielding the finger pad inserted into the finger grip hole, from the force from the bowling ball and distributing that force over the contact area made between the finger pad and the finger pad shield. See page 8 of the specification. The result achieved is the elimination of pressure spots on the bowler's finger pad by distributing that force over the widest area of contact made between the finger pad shield area of contact and the finger pad. See page 8 of the specification. The finger pad shield is identified by numeral 14 and is shown and described as mounted in opposed relationship to the end 13 of the bowler's finger. See page 13, 14 of the specification. The finger pad shield 14 is described as shaped to receive the finger pad 16 of the bowler's finger. See page 14 of the specification. The finger pad shield 14 is described as placed opposite the finger pad 16 of the bowler's finger. See page 17 of the specification. The finger pad shield 12 and the accompanying description in connection with Figures 5 and 6 and on pages 23 to 26 of the specification, and as stated in Paragraph 2, above, describe the finger pad shield on the first and second middle finger or fingers, which when, inserted into the bowling ball finger hole, distributes the force of the bowling ball against the bowler's middle finger or fingers, produced when the bowling ball is released and reduces the pressure from that force against the bowler's finger pad. With or without general widespread knowledge of bowling and how a bowling ball is gripped by the bowler's fingers inserted into the finger grip holes of the bowling ball and released by lifting the ball using the inserted fingers, the inventive concept as applied to the finger pad of a bowler's finger inserted into the finger grip hole of a bowling ball, is clear from a straightforward reading of the

specification and claims. That the knowledge of how a bowler grips a bowling ball by inserting the bowler's middle fingers into the finger holes of a bowling ball, is generally well known as shown by Patent 4,371,163, That a bowler lifts the bowling ball at the moment of release to thrust it forward imparting a forward velocity, by imparting a force to the bowling ball through a middle finger inserted into a bowling ball finger hole, is well known and shown for example in Patent 4,371,163.

In summary, it is clear from the specification and drawings, this invention is a method of improving control at the point of release of the bowling ball by applying a force from the bowler's finger pad, through a finger pad shield to the interior surface of the bowling ball finger hole, lifting the bowling ball when releasing the ball and using the finger pad shield to reduce the pressure caused by the force of the bowling ball on the finger inserted in the finger grip hole.

Claim 14, as an example of independent claims 14 and 21, recites, as method steps,

d. releasing said finger pad of a bowler and said finger pad shield from said finger hole of a bowling ball by applying a first force from said finger pad of a bowler in a first direction against said first surface of said finger pad shield, through said finger pad shield to said second surface of said finger pad shield, against said interior surface of said finger hole of a bowling ball, to lift said bowling ball, and producing a second force in a second direction, from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield;

e. said step d, of releasing said finger pad of a bowler and said finger pad shield from said finger hole of a bowling ball, includes the step of receiving said second force in said second direction, from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield, through said

finger pad shield to said first surface of said finger pad shield and over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield; and

f. said step e, of receiving said second force in said second direction from said finger hole of a bowling ball, against said second surface of said finger pad shield, includes the step of distributing said second force, in said second direction from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield, over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield, for reducing a pressure over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield, produced by said second force, in a second direction from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield.

and such method steps are appropriate in a method claim reciting the physical operation or function of the finger pad shield inserted into the finger hole of a bowling ball and as recited in the Claims. See MPEP SECTION---2173.05(g) Functional Limitations,

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.

4. To define Applicants' invention with particularity, Claims 14 to 30 identify the force applied to the bowling ball from the finger pad of the bowler as the "first force" operating in a "first direction" and the force from the finger hole of the bowling ball as the "second force" operating in a "second direction." This identification of the forces to or against the finger pad shield are supported in the description of a preferred embodiment of the inventive method as set forth in the specification and is not new matter.

5. Examiner's statement, "one cannot physically take the step of 'spreading said force.' does not apply to the recitations in the originally submitted and cancelled claims 1 to 13 or to New Claims 14 to 30 which recite the functional limitations of the inventive method, as permitted by 35 U.S.C. 112. ... 35 U.S.C. 101 defines four categories of inventions that Congress deemed to be the appropriate subject matter of a patent; namely, processes, machines, manufactures and compositions of matter. The latter three categories define "things" while the first category defines "actions" (i.e., inventions that consist of a series of steps or acts to be performed). See 35 U.S.C. 100(b) ("The term "process" means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material."). MPEP Section SECTION---2106 Patentable Subject Matter - Computer-Related Inventions, IV (A). A claim that requires one or more acts to be performed defines a process MPEP Section SECTION---2106 Patentable Subject Matter - Computer-Related Inventions, IV(B)(2)(b). Claims 1 to 13 and new claims 14 and 15, 21 to 23, 24 and 25, recite a series of acts to be performed, defined in terms of the functions performed by that series of acts. In particular, such steps are recited in Claim 14 (new) as "receiving a force in a second direction from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield; and distributing said force of the bowling ball in a second direction, over said contact area made between said bowler's finger pad and said first surface of the finger pad shield, for reducing the pressure over said contact area produced by said force of the bowling ball." The recitation of Claim 14 (New), as an

example, clearly describes the function of the steps of the claimed and recited method..

6. New Claim 16 is inserted for cancelled claim 6. It recites the method step of receiving said force of the bowling ball in a second direction against said second surface of said finger pad shield, includes the step of distributing said force of the bowling ball in a second direction, over said contact area made between said bowler's finger pad and said first surface of the finger pad shield, for reducing the pressure over said contact area produced by said force of the bowling ball, as recited in Claim 1 and includes the step of distributing said force of the bowling ball over the widest area of said contact area for preventing pressure spots within said bowler's finger pad. The recitation of claim 6 (cancelled) and claim 16 (New) is supported in the specification on page 10, second paragraph. Its meaning is written in plain language and clearly means the force from the bowling ball against the finger pad shield is distributed over the widest area of contact, made by the first surface of the finger pad shield and the bowler's finger pad and as recited in Claim 14 (New).

New Claims 14 to 20 and amended Claims 3 and 4 are believed to comply with the requirements of 36 USC 112.

7. Examiner's statement in Paragraph 5, made in support of the rejection of all of the claims in this case, is irrelevant to the claimed and recited invention. There is no application made by Examiner, of the precise parts of disclosure of 3,046,561 to the recitations of the claims. Claim 1 recites, "releasing said finger pad from said bowling ball finger grip hole by applying a force in a first direction." Examiner's statement,

in the use of Marinese the bowler would release the pressure on the finger pad by 'applying a force in a first direction ..to said interior surface of said bowling ball.' Moving the force in an opposite direction from the finger pad causes the finger to slip out of the hole in the bowling ball.



does not meet or read on, the recitation of Claim 1, as stated above. Examiner relies on a proposed "inherent disclosure", again, without showing how the "inherent features" read on or meet the claimed recitations.

Examiner's statement in Paragraph 5 rejecting the Claims, is a piecemeal attack on an element of Claim 1, without showing how the claimed invention described by all of the recited elements in Claim 1 is disclosed by 3,046,56. and Examiner has not completed the application of the cited patent of Marinese, 3,046,561, to the claimed recitation to justify the rejection.

Examiner's statement in Paragraph 5: "it is known to 'lift' the ball at the end of the release to impart spin." used to reject Claims 1 to 13, is ambiguous and for that reason Applicant cannot properly frame an answer. Those skilled in the art, know "lifting the ball to impart spin," is the proper way to bowl. Examiner has not disclosed how that public knowledge is applied to the recitation of Claim 2 to reject Applicants' claims, in a manner supported by the U.S. Patent Code.

Examiner has rejected Claims 1-13 as anticipated by Marinese, Patent 3,046,561. Applicant incorporates by reference into the "Remarks" section of this Amendment, the Declarations of Randall A. Addington and of W. Robert Addington, II, two of the co-inventors. The originally submitted claims have been rewritten to include the same scope as the cancelled claims, while clearly avoiding Examiner's grounds for rejection under 35 USC 112. New Claims 14 to 30 and amended Claims 3 and 4 are not anticipated or made obvious by Patent 3,046,561. Each of the Claims 14-30 and 3 and 4 distinguish over Patent 3,046,561, as set forth in the Declaration of Randall A. Addington. There is nothing inherent in Patent 3,046, 561 which discloses, shows or teaches the inventive method claimed. See MPEP ---SECTION---2112 Requirements of Rejection Based on Inherency; Burden of Proof.

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

Examiner has not shown by his express or implied statement, any such fact or reason, in connection with any characteristics necessarily flowing from 3.046.561.

Examiner's statement in paragraph 5 of Paper No. 2, that "Marinese ... would release the pressure on the finger pad by 'applying a force in a first direction... to said interior surface in the bowling ball." is contrary to the Marinese disclosure. As set forth in the Declaration of Randall A. Addington, Marinese is limited to use of a thumb protector to protect the thumb from frictional contact and the frictional drag associated with that contact, when releasing the bowling ball. There is no disclosure or teaching in Marinese that,

in the use of Marinese the bowler would release the pressure on the finger pad by 'applying a force in a first direction . . . to said interior surface of the bowling ball.

As stated by Randall A. Addington, in his Declaration, Marinese shows withdrawing the thumb pressure at the moment of release. Accordingly, Marinese's device or method as disclosed cannot meet the recitation of claims 14-20 and 3 and 4, and did not meet the recitations of the original claims 1-13, which require the steps of releasing the ball by applying a force against the ball. The method of Marinese requires the finger be withdrawn and the force against the ball and the ball finger holes be removed. This is the opposite to the recitation of the claimed invention, in Claim 14 (New) as follows.

d. releasing said finger pad of a bowler and said finger pad shield from said finger hole of a bowling ball by applying a

first force from said finger pad of a bowler in a first direction against said first surface of said finger pad shield, through said finger pad shield to said second surface of said finger pad shield, against said interior surface of said finger hole of a bowling ball, to lift said bowling ball, and producing a second force in a second direction, from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield;

e. said step d, of releasing said finger pad of a bowler and said finger pad shield from said finger hole of a bowling ball, includes the step of receiving said second force in said second direction, from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield, through said finger pad shield to said first surface of said finger pad shield and over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield; and

f. said step e, of receiving said second force in said second direction from said finger hole of a bowling ball, against said second surface of said finger pad shield, includes the step of distributing said second force, in said second direction from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield, over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield, for reducing a pressure over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield, produced by said second force, in a second direction from said interior surface of said finger hole of a bowling ball,

against said second surface of said finger pad shield.

Marinese cannot disclose the recited invention because the method of Marinese is limited to withdrawing the pressure of the thumb on the interior surface of the bowling ball to eliminate friction on the thumb, as when the thumb comes out of the thumb hole and is abraded against the edge of the thumb finger hole. The inventive method recited in Claims 14-30 and 3 and 4 is of applying a force from the finger pad to the bowling ball finger hole interior is contrary to the Marinese method of withdrawing the thumb and using a thumb guard to prevent scraping or abrading the thumb on the interior or edge of the finger hole. In the recited claimed inventive method, the finger pad is used to force the finger pad shield against the interior wall of the bowling ball finger hole and the finger pad shield reduces the pressure on the finger pad from the force of the bowling ball by distributing that force over the contact area made between the finger pad and the surface of the finger pad shield..

Examiner's statement,

"Moving the force in an opposite direction from the finger pad causes the finger to slip out of the hole in the bowling ball,"

is irrelevant to the recited claimed invention. The claimed invention does not move a force in an opposite direction but as recited, receives the force from the bowling ball against the finger pad shield in the process of applying a first force against the ball for lifting the ball and imparting a forward velocity to the ball. The force of the bowling ball is in a second direction from bowling ball interior and against the finger pad shield while the force in the first direction, in the release of the bowling ball, is from the finger pad shield to the bowling ball interior. Marinese does not use the thumb device to lift the ball when releasing the ball. As states above, Marinese withdraws the thumb device before releasing the ball.

Examiner does not explain, and it is not clear, what is meant by, "Inherently, more force is received 'against the second surface' of the shield shown by Marinese, " or how that statement can be reconciled with Claims 1-13 or 14-20 or the preceding statement, "Moving the force in the opposite direction from the finger pad causes the finger to slip out of the hole in the bowling ball." Ultimately, Examiner must show how Marinese teaches, shows or discloses release of the ball by applying a force against the finger hole, when the object of Marinese is to release the ball by withdrawing the thumb and avoiding contact and "frictional drag."

Marinese uses his thumb device only for preventing frictional resistance or drag when the thumb is withdrawn from the bowling ball thumb hole. Column 3, lines 27 to 33. Marinese does not show, teach or describe anywhere in his patent 3,046,561 anything about an area of contact made between the finger pad shield and the finger pad, or lifting bowling ball when releasing it and distributing a second force from the bowling ball against the finger pad, produced by the application of the bowler's maximum natural force, or about distributing that second force over the widest area of contact of the area of contact, or distributing that second force over the contact area or uniformly over the contact area.

In particular, the plain meaning of,

distributing said second force, in said second direction from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield, over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield, for reducing a pressure over said contact area made between said finger pad of a bowler and said first surface of said finger pad shield, produced by said second force, in a second direction from said interior surface of said finger hole of a bowling ball, against said second surface of said finger pad shield.

(Underlining added)

as recited in Claim 14, is the distribution of that force over the contact area, as recited in the claims. Over has its plain meaning and as used in pages 5, 8, and 23 of the specification, to mean covering the recited "contact area."

Claim 4 has been amended to particularly recite the invention as taught and described in a preferred embodiment shown in the specification. Patent 3,046,561 does not show the step recited in Claim 4, as,

the step of controlling the depth of insertion of said finger pad finger pad shield in said finger grip hole by engaging a raised surface connected to said finger pad shield and extending away from said finger pad shield, with the surface of said bowling ball to limit the depth of insertion of said finger pad shield into said bowling ball finger hole.

The thumb device of Marinese is designed to fit inside the thumb hole, with the stated advantage," it may be freely inserted into and removed from opening T." Column 3, lines 18-22. Support for Claim 4 is in the specification. The ring 9 is shown fitted into recess 8 and is flush with surface 1a. As such ring 9 does not inherently limit the depth of insertion. See Column 50-58 and Figures 6,7,8 and 9.

3,045,561 shows a thumb device with an outer part 1 which is described as "substantially rigid," and as "yieldable," column 2, lines 41-46 and column 3, lines 45-50. This description does not describe any device which can be used to perform the steps recited in Claims 14-30, particularly, the step of "distributing the second force from the finger hole of the bowling ball against said second surface of said finger pad shield, over said contact area made between said bowler's finger pad and said first surface of said finger pad shield..." The Marinese disclosure does not show a structure for the

outer part 1 of the thumb device capable of performing this function. Marinese does show a thumb device which is made to be resilient to cushion the impact of any force against the thumb. This resiliency is shown by part 7 and by the description of outer part 1 as "substantially rigid, and as "somewhat yieldable, without disclosing any other property or function for the outer "substantially rigid" or "somewhat yieldable" part 1.

From the disclosure of Marinese, there is no showing or teaching that the thumb device including member 1 and member 7, is capable of distributing a quantitatively definable force received from the finger hole of a bowling ball, over the recited "contact area made between said bowler's finger pad and said first surface of said finger pad shield."

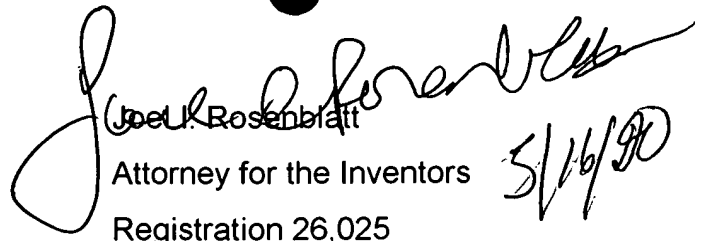
Claims 21(New) and 22 (New), recites the method of placing the finger pad shield on a middle finger of a bowler. The middle finger is disclosed in the specification as used in releasing the bowling ball, by applying a "first force" in a "first direction," against the finger hole of a bowling ball, and "receiving a "second force," in a "second direction," from the finger hole of a bowling ball. Marinese is limited to use of the opposed thumb to grasp the bowling ball and to the use of the thumb device to prevent abrasion on the thumb when "withdrawing" the thumb from the bowling ball. Marinese does not disclose or teach the method recited in Claims 21(New) and 22 (New).

8. 3,045,561, as stated by Randall A. Addington, in his Declaration submitted with this Amendment, Paragraphs L to N, show the disclosure of 3,036,561 is self contradictory, inoperative, incredible and unreliable, for disclosing any method of bowling using finger(s) to control the rotation of the ball.

9. Applicant requests Claims 14 to 30, now in this case be allowed. Applicant will provide a formal set of drawings upon receiving a notice of allowance.



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